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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,853	01/18/2002	Harumi Ishiyama	03500.016113	1345

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EXAMINER

BRASE, SANDRA L

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/050,853

Applicant(s)

ISHIYAMA ET AL.

Examiner

Sandra L. Brase

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3, 4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chigono et al. (US 6,038,418) in view of Kukimoto et al. (US 5,915,150), Haneda et al. (US 5,381,215), Kato et al. (US 6,054,244), Van Nostrand's Scientific Encyclopedia and Yamamoto et al. (US 5,223,365).

Chigono et al. (...418) discloses an image-forming apparatus and method comprising: a charging object member, which is an electrophotographic photosensitive member (1); a charging assembly (2) which is in contact with the charging object member to electrostatically charge the charging object member; an exposure assembly (4) which forms an electrostatic latent image on

Art Unit: 2852

the charging object member by exposure (col. 9, lines 24-33); a non-contact developing assembly (5) making use of a magnetic one-component developer, where the developer comprises a magnetic toner having a binder resin and a magnetic material (col. 9, lines 59-61), which develops the electrostatic image with the magnetic one-component developer to form a magnetic-toner image (col. 9, lines 34-58); a transfer charging assembly (6) which transfers to a recording medium the magnetic-toner image formed on the charging object member (col. 9, line 65 – col. 10, line 16); and collecting a magnetic toner remaining on the charging object member by the developing assembly simultaneously with a development of the latent image in a subsequent image forming process, where the charging object member was charged again and exposed again and the new toner image developed is transferred to a recording medium (col. 15, line 15 – col. 16, line 21; and figure 2). No cleaning unit is present between a downstream side of the transfer charging assembly and an upstream side of the charging assembly (figure 2). The charging assembly comprises a charging member constituted of an elastic body having a shape of a roller and having a porous material on its surface (col. 10, lines 33-36), where the surface of the charging member is movable with a velocity differential in the opposite direction with respect to the surface of the charging object member (col. 9, lines 7-10), and conductive particles are present at least at the contact surfaces between the charging member and the charging object member (col. 12, lines 48-51). The conductive particles have a specific resistance of no more than $10^{12} \Omega \text{ cm}$ (col. 12, lines 1-4), and an average particle diameter of 10nm – 50 μm (col. 12, lines 16-43). The magnetic one-component developer has conductive particles (col. 9, lines 38-40). The outer-most surface layer of the charging object member has a volume resistivity of $10^9 - 10^{14} \Omega\text{cm}$ (col. 20, lines 58-67). The charging member has a hardness of 25 degrees to 50

Art Unit: 2852

degrees Asker C (col. 11, lines 1-8). However, Chigono et al. (...418) do not disclose the specific amount of the velocity differential, the roughness of the charging member, the contact angle with water of the charging object member, the value of the average circularity of the developer as determined by the claimed equations, and the parts by weight of conductive particles in the developer in relation to magnetic toner particles. Kukimoto et al. (...150) disclose an image forming apparatus and method comprising a charging object member and a charging assembly, where the surface of the charging member is movable with a velocity differential in the opposite direction with respect to the surface of the charging object member, where the velocity differential at least -110% (col. 26, lines 21-30; and figure 1). The charging object has a surface with a contact angle to water of at least 85 degrees, more preferably 90 degrees (col. 20, lines 61-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the velocity differential have the value of at least -110% , which is in the claimed range, so as to provide a stable charging performance and an improved performance of transfer of residual toner recovery in the development step, as disclosed by Kukimoto et al. (...150). Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the charging object member have a contact angle to water of at least 85 degrees, preferably 90 degrees, which is in the claimed range, so as to improve the transferability of the toner in the transfer step, thereby remarkably reducing the amount of transfer residual toner, as disclosed by Kukimoto et al. (...150). Haneda et al. (...215) disclose an image-forming apparatus and method including a charging object member, and a charging assembly having a charging member and conductive particles are present at the contact surfaces between the charging member and the charging object member (figure 2), where the

Art Unit: 2852

charging member has a mean surface roughness of 2-15 μm (col. 5, lines 65-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the charging member have a surface roughness of 2-15 μm , which is in the claimed range, so as to provide stable and uniform conveyance of the conductive particles, as disclosed by Haneda et al. (...215). Kato et al. (...244) disclose a magnetic toner used in an image-forming apparatus and method (col. 14, lines 52-54) that has an average circularity of 0.970 to less than 1.000 (abstract; and col. 8, lines 60-62). The circularity is determined by the following equation:

Circumferential length of a circle having the same projected area as a particle image

Circumferential length of the particle image

(See col. 18, lines 42-54). It would have been obvious to one of ordinary skill in the art at the time of invention was made to have the toner have a circularity of 0.970 to less than 1.000, which is in the claimed range, so that the toner particles have a superior triboelectric charging performance and can be charged stably, and hence are characteristic of superior transfer performance in electrophotographic systems, as disclosed by Kato et al. (...244). Moreover, Van Nostrand's Scientific Encyclopedia defines an ordinary average, where there are n measurements of some physical quantity made, as being calculated by the mathematical equation of: $X = \sum X_i/n$ (page 151). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the average circularity be calculated using the claimed equation for the average since such a mathematical equation is a notoriously well known and established equation for calculating an average of plural measurements, as disclosed by Van Nostrand's Scientific Encyclopedia. Yamamoto et al. (...365) disclose a magnetic one-component developer including magnetic toner particles including binder resin, magnetic material, and conductive

Art Unit: 2852

particles, where the developer comprises: 100 parts by weight of magnetic toner particles including binder resin and magnetic particles, and 0.5-10 parts by weight of conductive particles (col. 6, lines 31-40; and col. 10, lines 9-12). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the one-component magnetic developer have the claimed parts by weight of conductive particles in the developer in relation to the magnetic toner particles, as disclosed by Yamamoto et al. (...365), since such a developer is well known for use in developing latent images into toner images.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3, 4 and 6-9 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments filed 6/4/03 have been fully considered but they are not persuasive.

6. In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

Art Unit: 2852

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kukimoto et al. (US 5,915,150) disclose having a velocity differential value in the claimed range so as to provide a stable charging performance and an improved performance of transfer of residual toner recovery in the development step (col. 26, lines 21-30), and to have the charging object surface with a contact angle to water in the claimed range so as to improve the transferability of the toner in the transfer step, thereby remarkably reducing the amount of transfer of residual toner (col. 20, lines 61-66). Haneda et al. (US 5,381,215) disclose the charging member having surface roughness in the claimed range so as to provide stable and uniform conveyance of the conductive particles (col. 5, lines 65-67). Kato et al. (US 5,915,150) disclose the toner having a circularity value in the claimed range since such toner has a superior triboelectric charging performance and can be charged stably, and hence are characteristic of superior transfer performance in electrophotographic systems (col. 8, line 60 – col. 9, line 9). Van Nostrand's Scientific Encyclopedia discloses an ordinary calculation is a notoriously well known established mathematical principle (page 151). Finally, Yamamoto et al. (US 5,223,365) disclose a toner that develops a latent image into a toner image preferably comprises 0.5 to 10 parts by weight of conductive particles in relation to 100 parts by weight of toner particles including binder resin and magnetic material (col. 1, lines 5-8; and col. 6, lines 31-40).

Final Rejection

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2852

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contacts \ Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra L. Brase whose telephone number is (703) 308-3101.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley, can be reached on (703) 308-1373. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431 or 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sandra L. Brase
Primary Examiner
Art Unit 2852

August, 25, 2003